Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Inquiry Concerning the Deployment of Advanced	)	
Telecommunications Capability to All Americans	)	
in a Reasonable and Timely Fashion, and Possible	)	GN Docket 12-228
Steps to Accelerate Such Deployment Pursuant to	)	
Section 706 of the Telecommunications Act of 1996,	)	
as Amended by the Broadband Data Improvement Act.	)	

REPLY COMMENTS OF THE

SCHOOLS, HEALTH AND LIBRARIES BROADBAND COALITION

("SHLB Coalition")

The Schools, Health and Libraries Broadband Coalition ("SHLB Coalition")[1] respectfully submits these reply comments to the Federal Communications Commission (FCC or Commission) in response to Ninth Broadband Progress Notice of Inquiry ("Notice") in the above-captioned docket.

In brief, Goal #4 of the National Broadband Plan calls for anchor institutions in every community to have affordable access to 1 Gbps broadband by the year 2020.[2] To date, the FCC has not undertaken specific steps to reach that goal. The SHLB Coalition submits that, in this and future annual reports, the Commission should examine and evaluate the availability of broadband for community anchor institutions (CAIs), in addition to its analysis of the availability

[1] The SHLB Coalition (pronounced "Shell-Bee Coalition") is a broad-based coalition of representatives of schools, health care providers, libraries, private sector companies, for-profit and not-for-profit broadband providers, state and national research and education (R&E) networks, municipalities, philanthropic foundations, consumer organizations and others. All members of the SHLB Coalition share the common goal of bringing open, affordable, high-capacity broadband to CAIs across the United States. A list of SHLB Coalition members is available at www.shlb.org/members.

[2] "Goal No. 4: Every community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings." Available at http://www.broadband.gov/plan/goals-action-items.html.

of broadband for residential customers. In our view, open, affordable, high-capacity broadband networks and services are **not** being deployed to serve the needs of CAIs in a timely fashion today. We urge the Commission to take action to address this shortfall and to accelerate actions to meet Goal #4 and we provide a list of suggested actions at the end of these reply comments.

I. The Commission Should Specifically Evaluate the Availability and Quality of Broadband for Community Anchor Institutions in Determining Whether Broadband is Being Deployed in a Reasonable and Timely Fashion.

The statutory language of Section 706 calls upon the Commission to conduct an analysis of "whether broadband is being deployed to all Americans in a reasonable and timely fashion."[3] The Commission has a history of conducting this analysis in terms of "residential" customers only. The SHLB Coalition respectfully suggests that the Commission should add an additional category of users in its analysis – community anchor institutions.[4]

To state the obvious, anchor institutions provide a complementary and increasingly vital role in serving the broadband needs of consumers. Almost two-thirds of Americans have a library card, and about one-half visit a library at least once per year.[5] There are approximately 77 million people age 3 and older enrolled in school (elementary through college), which amounts to about 27% of the entire population.[6] CAIs provide an array of essential broadband-related services to "all Americans" and thus fit squarely within the intent and meaning of the statutory language.[7]

CAIs are the "third leg of the stool" of a healthy community. They play a vitally important role in providing basic and essential services to American consumers – telemedicine, distance learning, access to e-government services, job-training, scientific research, to name just a few.

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[3] 47 U.S.C. § 1302. Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996) (1996 Act), as amended by the Broadband Data Improvement Act (BDIA), Pub. L. No. 110-385, 122 Stat. 4096 (2008), is now codified in Title 47, Chapter 12 of the United States Code. *See* 47 U.S.C. § 1301 et seq.

[4] The FCC has previously recognized that anchor institutions include community colleges, colleges and universities, town halls, federal and corporate research laboratories, libraries, museums, K12 schools, hospitals, and clinics. See, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC 11-13, released February 9, 2011 ("CAF NPRM"), note 248.

[5] http://www.yesmagazine.org/happiness/the-public-library-manifesto.

[6] http://www.census.gov/newsroom/releases/archives/facts_for_features_special_editions/cb11-ff15.html.

[7] The statutory language is not limited to households and uses the much broader term "consumers". In fact, the language of section 706 specifically calls for the Commission to evaluate the broadband available to "elementary and secondary schools and classrooms," which reinforces that Congress did not intend to limit its analysis to residential consumers.

Strong schools, libraries, health providers, museums, community colleges and higher education, community centers, public media and attract families and businesses to locate in the region.

Community anchor institutions have unique needs for very high-capacity bandwidth that are very different from those of residential consumers. To oversimplify, CAIs often have the broadband needs of a business with the resources of a residence. Community anchor institutions need very high-capacity bandwidth, from 10 Mbps to 10 Gbps. But bandwidth is only one of several qualities that describe the type of broadband connectivity needed by anchor institutions. Providing "big pipes" to an end user does not necessarily guarantee the delivery of high-end applications. CAIs may need special services that are unique to their mission – firewalls, filtering, segregation of "public" traffic from "administrative traffic", direct connections to other branches or other anchor institutions in addition to connections to the commodity Internet, connections to and through non-profit providers (municipal or research and education networks) as well as commercial providers. Providing adequate connectivity requires a certain degree of network openness, the availability of performance data to monitor the network, and remote troubleshooting. Unlike residential users, community anchor networks often require additional network design and engineering, network monitoring, and training to obtain the level of broadband connectivity needed to run education, e-government, health and job-training applications.

This additional analysis is especially warranted because of the National Broadband Plan's Goal #4, which calls for 1 Gbps capacity to anchor institutions in every community by 2020. Adoption of a process to evaluate the availability of broadband to these institutions will help the Commission determine whether or not it is meeting this goal, and whether additional steps are necessary to reach this goal.

While deploying high-capacity broadband to anchor institutions is important in and of itself, there are also some significant spill-over benefits from deploying high-capacity broadband to anchor institutions:

- Building big "Middle Mile" pipes to serve anchor institutions stimulates "Last Mile" investment.

Building high-capacity broadband facilities to anchor institutions can also help serve residential and business customers. The high-capacity broadband networks deployed to serve community anchor institutions can provide "jumping off" points for distributing additional broadband services into surrounding neighborhoods. In other words, as long as the network facilities are open to interconnection, the broadband network deployed to the anchor institutions can serve as the "hub" from which "Last Mile" providers can extend service to the surrounding

community.[8] The SHLB Coalition agrees with the goal of the Plan that, ultimately, all homes and businesses should have access to affordable, high-capacity broadband. Bringing high-capacity broadband to anchor institutions can help to achieve this important goal.[9]

- Bringing high-capacity broadband to anchor institutions can promote broadband adoption at the home.

At least one study has found that school broadband use contributes directly to a higher adoption rate in households with children.[10] This study suggests that children who have a good experience using the Internet at school convince their parents to purchase broadband at home. It is equally possible that this could be true of people who use the Internet at hospitals or libraries as well. Thus, evaluating and promoting broadband at anchor institutions contributes to creating an environment that supports and encourages broadband deployment to the home and use at the home.

II. The Commission Should Evaluate the Quality of Broadband Available to Community Anchor Institutions.

Assuming the Commission agrees to incorporate an analysis of anchor institutions' broadband needs and availability in this and future reports, the next question is what level of broadband should meet the definition of "advanced telecommunications capability" under the statute. It is not sufficient for the Commission simply to measure in a binary manner whether broadband is

[8] These connections to anchor institution "hubs" are sometimes referred to as the "second mile." See, COMMENT SOUGHT ON IMPACT OF MIDDLE AND SECOND MILE ACCESS ON BROADBAND AVAILABILITY AND DEPLOYMENT, NBP Public Notice # 11. DA 09-2186 (Oct. 8, 2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-2186A1.pdf. ("'Second mile transport' refers generally to the transport and transmission of data communications from the first point of aggregation (such as a remote terminal, wireless tower location, or HFC node) to the point of connection with the middle mile transport.")

[9] The success of the Broadband Technology Opportunities Program (BTOP) proves this point. The BTOP Infrastructure program has funded about 115 Middle Mile broadband projects serving anchor institutions across the country. According to NTIA Administrator Lawrence Strickling, infrastructure grantees have reached nearly 400 interconnection agreements with Last Mile providers. See, Testimony of The Honorable Lawrence E. Strickling, Assistant Secretary for Communications and Information, Before the Committee on Energy and Commerce Subcommittee on Communications and Technology United States House of Representatives, Hearing Entitled "Broadband Loans and Grants". May 16, 2012, available at http://www.ntia.doc.gov/speechtestimony/2012/testimony-assistant-secretary-strickling-broadband-loans-and-grants.

[10][10] See, "Spillover Effects of Broadband in Schools and the Critical Role of children," by Belo, Ferreira, Carnegie Mellon University (available at www.tprc.org). See also, NTIA 14th Quarterly BTOP Report, p. 3 ("Connecting these anchor institutions can have a multiplier effect throughout a community because people may adopt broadband at home after discovering the benefits of broadband access at a library or school.")

or is not "available" to CAIs.[11] Asking such a "yes or no" question does not paint a clear picture of whether or not the anchor institution has the type and quality of broadband connection that it needs to serve its community. For instance, even though virtually every public library in the country has some type of broadband connection today, the American Library Association's annual study reports that 41% of these libraries have an inadequate level of broadband to meet patron needs.[12] The Commission itself has found that nearly 80% of schools and libraries reported that their broadband connections are "inadequate".[13]

There are a variety of benchmarks that the Commission can use to evaluate the quality of the broadband connectivity of anchor institutions in different regions:

- The State Educational Technology Directors Association (SETDA) recommends that an elementary or secondary school should have at least 100 Mbps external connection to the Internet for each 1,000 students and staff by the year 2013-2014, and 1 Gbps connection per 1,000 students and staff by 2017-2018.[14]
- The BTOP program has funded several infrastructure and Public computer Center projects that are providing significant upgrades to the broadband capabilities of over 10,000 anchor institutions.[15] While we do not have the information about what level of broadband these anchors are receiving, it may be possible for the Commission to ask NTIA for that information as a demonstration of what levels of broadband can be realistically provided. For instance, the Utah Education Network (UEN) has connected about 90 percent of the state's K-12 schools to its network, providing speeds from 45 Mbps to 1 Gbps.
- The National Broadband Map has some information about the level of broadband purchased by anchor institutions. More work needs to be done to improve the quality of the data, but this information can be incorporated into this analysis.

[11] See Para. 49 of the Notice ("Service quality may also be an important factor for consumers. How should the Commission factor service quality, or other characteristics of a service, into its assessment of broadband availability?")
[12]" Despite gains in access speeds, 41.4 percent of libraries report insufficient speeds." http://www.ala.org/research/sites/ala.org.research/files/content/initiatives/plftas/2011_2012/plftas12_technology%20landscape.pdf. p.23.
[13] http://transition.fcc.gov/010511_Eratereport.pdf
[14] "The Broadband Imperative: Recommendations to Address K-12 Educational Infrastructure Needs."
[15] NTIA 14th Quarterly BTOP report (Sept. 2012).

III. The Evidence Shows that Many Community Anchor Institutions Do Not Have Adequate Broadband Today.

There are several pieces of evidence to indicate that the level of broadband currently available to anchor institutions is insufficient to meet their needs:

a. A recent survey of E-rate participants conducted by the Commission found that "[n]early 80% of all [schools and libraries in the E-rate program] say their broadband connections do not fully meet their current needs."[16]

   - Furthermore, the Commission found that "only 11% [of schools and libraries] say that that their current connection completely meets their streaming video needs and even fewer (10%) report that their connections completely meet their video-conferencing needs. This question only refers to the bandwidth to the premises, not internal wiring or other network factors that may affect the actual experience in the classroom or office. As more applications have a video component, schools and libraries will likely need additional bandwidth to take advantage of the full range of educational options available."[17]

b. The National Broadband Map developed jointly by the Commission and the National Telecommunications and Information Administration (NTIA) showed that anchor institutions are "largely underserved." According to NTIA: "The data show that two-thirds of surveyed schools subscribe to speeds lower than 25 Mbps, however. In addition, only four percent of libraries reported subscribing to speeds greater than 25 Mbps."[18]

c. The National Broadband Plan found that 29% of the 3700 rural health care clinics were located in areas where mass-market broadband was not available. The Plan then noted that most health clinics need much greater capacity than 4 Mbps capacity typically available to households, so the number of rural health clinics who do not have access to high-capacity broadband is much higher than 29%.[19]

d. Only 17 percent of rural libraries report offering speeds greater than 10 Mbps, as compared to 57.4 percent of urban libraries. Due to the broadband demands of streaming video (including online instructional courses) and the sharing of increasingly graphic-heavy

[16] 2010 E-Rate Program and Broadband Usage Survey: Report, Federal Communications Commission, Wireline Competition Bureau, DA 10-2414, released Jan. 6, 2011, available at http://transition.fcc.gov/010511_Eratereport.pdf.
[17] Id. P.8.
[18] "COMMERCE'S NTIA UNVEILS NATIONAL BROADBAND MAP AND NEW BROADBAND ADOPTION SURVEY RESULTS," NTIA Press Release, Feb. 17, 2011 (available at http://www.ntia.doc.gov/press/2011/NationalBroadbandMap_02172011.html).
[19] National Broadband Plan, Chapter 10

content, many libraries experience network saturation on a daily basis, which seriously affects the work of both library staff and the public.[20]

e. An academic study from January 2011 found that anchor institutions in non-urban areas have less broadband capability than urban institutions. Using data recently compiled by the NTIA as part of the efforts to construct the National Broadband Map, Chris Forman et. al. conclude that "[s]chools, libraries, and medical/healthcare organizations in MSAs have broadband bandwidth that are between 14.6 Mbps and 40.9 Mbps higher than those in other areas." [21]

f. It is estimated that the BTOP Program will connect between 5% and 15% of all anchor institutions. Internet2 estimates that there are approximately 200,000 community anchor institutions.[22] NTIA calculates that the BTOP program has connected just over 10,000 CAIs as of July 30, 2012. If the number of connected CAIs doubles to 20,000 by the end of the program, it will have connected about 10% of CAIs.

There are reasons to believe that the broadband adequacy for community anchor institutions will become more challenging in the near future.

1. Elementary schools in 46 states will be required to provide their students with on-line testing as a result of adopting the "common core" online testing standards. Many schools are concerned that they will not have adequate online bandwidth to accommodate all the additional testing required to meet these standards.[23]

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[20] See, http://www.ala.org/research/sites/ala.org.research/files/content/initiatives/plftas/2011_2012/plftas12_execsummary.pdf. p.6.

[21] Chris Forman, Avi Goldfarb, and Shane Greenstein, "Local Capabilities and Broadband Bandwidth at Community Anchor Institutions," Jan. 31, 2011, available at http://mgt.gatech.edu/directory/faculty/forman/pubs/BroadbandBandwidth--FormanGoldfarbGreenstein.pdf). ("In this study we have examined the relevance of urban leadership to a technology complementary to advanced internet: high bandwidth broadband. Our findings are broadly consistent with the model: Urban location is related to use of high broadband bandwidth, and more so when the location appears to have the expertise that enables institutions to adopt and use that bandwidth cheaply and effectively.") p. 13.

[22] http://apps.fcc.gov/ecfs/document/view?id=7021996951.

[23] See, "Are you Tech-Ready for the Common Core?", EdWeek, Oct. 15, 2012, available at http://www.edweek.org/dd/articles/2012/10/17/01readiness.h06.html. ("School districts are raising concerns about their ability to be technologically ready to give Common Core State Standards assessments to students online in two years. Administrators say they remain uncertain about the types of devices to buy, the bandwidth they need, and the funding available for technology improvements. . . . In addition, bandwidth is a huge concern for districts, [Jim] Holbeck [President of the School Administrators of South Dakota] says. The state provides a minimum level of bandwidth, he adds, "but if we want more, we have to pay for it," and school budgets have little extra money.")

2. Internet consumers are increasingly watching videos over the Internet. One analyst says that U.S. online video consumption increased by 660% in one year (Feb. 2011 to Feb. 2012).[24]

IV. Several Other Nations Have Implemented Specific Plans to Ensure that Anchor Institutions Have High-Bandwidth Broadband Services.

A number of other countries have adopted specific plans to address the broadband needs of community anchor institutions. Here is a brief summary of some of these efforts:

- Ireland appointed HEAnet (Ireland's National Education & Research Network) to act as network managers of a new high-speed connectivity program that began providing 100 Mbps network connectivity to post-primary schools across Ireland in 2010. HEAnet will procure, design and build a high-speed network that will connect over 700 post-primary schools by the end of 2012.[25]

- New Zealand has prioritized schools in its Ultra Fast Broadband (UFB) and Rural Broadband Initiative (RBI), under which dark fiber is being rolled out across New Zealand. Under these programs, 97.7 per cent of schools and 99.9 per cent of students will receive ultra-fast broadband capability of 100 Mbps by 2016. The remaining 2.3 per cent of schools in areas too remote for fiber will have access to improved broadband services via satellite services. The government notes that, "[w]hile most schools are already on broadband, speeds typically range from 0.5 to 5 Mbps. This is increasingly inadequate for many online services to work properly in modern learning environments."[26]

- India has announced that the government will be implementing a project to link all government and community schools across the country through broadband internet under 'connect a school, connect a community initiative.' The government is planning to use its Rural Telecommunications Development Fund (RTDF) to extend broadband internet service to schools and rural communities by establishing optical fiber. Telecom operators and Internet service providers contribute 2 percent of their annual income to the RTDF.[27]

- Australia is building a National Broadband Network (NBN) that will provide fiber connections to 93% of Australian homes, schools and businesses.[28]

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[24] http://www.quickplay.com/blog/2012/03/growth-of-online-video-connected-tvs-and-tablets-continue-to-accelerate/.
[25] http://www.heanet.ie/news_and_publications/heanet_100mb_schools.
[26] http://www.minedu.govt.nz/theMinistry/EducationInitiatives/UFBInSchools.aspx.
[27] http://www.ekantipur.com/the-kathmandu-post/2012/09/24/nation/govt-plan-to-connect-public-schools-with-broadband/240018.html.
[28] http://www.nbn.gov.au/about-the-nbn/what-is-the-nbn/.

V. The Commission Should Develop an Action Plan to Reach the 1 Gbps Goal Set Forth in the National Broadband Plan.

The National Broadband Plan specifically recommends the provision of high-capacity broadband service to anchor institutions as one of the seven key goals of the Plan:

> *Goal No. 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals and government buildings.*
>
> *Schools, libraries and health care facilities must all have the connectivity they need to achieve their purposes. This connectivity can unleash innovation that improves the way we learn, stay healthy and interact with government.*[29]

While the SHLB Coalition is pleased that the National Broadband Plan articulates this goal, it is not self-fulfilling. Achieving this goal will require specific rule changes and policy initiatives. The Commission has not, to date, opened a proceeding dedicated to accomplishing this 1 Gbps goal for anchor institutions. If it is not going to open such a proceeding, we respectfully suggest that it ought to fold in the needs of anchor institutions into its most important proceedings, such as this one. Otherwise, the Goal #4 will become mere words on a page.

Increasing the focus on service to anchor institutions may provide the strongest value by serving the greatest number of people for the least investment while promoting the National Purposes outlined in the National Broadband Plan. Anchor institutions in rural areas are often clustered together near the town or community center; extending high-capacity broadband connections to the anchor institutions may cover a shorter distance from the network "hub" than remote residences.

Of course, since anchor institutions require greater capacity than residential consumers, the program must also factor in the cost of implementing the necessary bandwidth capacity, electronics and technical expertise to provide anchor institutions with the quality of service that they need. Nonetheless, since the largest expense of deploying broadband facilities is often associated with the per-mile costs of constructing conduit (digging trenches, placing telephone poles, etc.) or deploying broadband through existing conduit, the costs of serving anchor institutions will likely be less than deploying to serve homes in, for instance, mountainous, wooded or other remote areas.

[29] National Broadband Plan, p. 10.

Here are some specific steps that the FCC can take to address the needs of CAIs for open, affordable, high-capacity bandwidth and meet Goal #4:

a. The FCC should measure existing capacity at anchor institutions to determine whether or not we are reaching that goal.

The FCC has developed a program to measure the broadband speeds at residences,[30] and recently announced that it was launching a similar effort to measure wireless broadband capability.[31] The Commission should immediately consider an effort to measure the broadband capabilities of community anchor institutions.

b. Establish "Challenge Grants" to encourage aggregate shared networks among anchor institutions (as called for in National Broadband Plan).

The FCC could invite commercial and non-commercial entities to submit applications for funding to serve the anchor institutions in an unserved or underserved[32] community with a shared, high-capacity broadband network. Recommendation 8.20 of the National Broadband Plan articulately described the benefits of aggregating services from anchor institutions onto a common, shared network. The National Broadband Plan states as follows:

> *Recommendation 8.20:* ***Federal and state policies should facilitate demand aggregation and use of state, regional and local networks when that is the most cost-efficient solution for anchor institutions to meet their connectivity needs.***
>
> *Government policy often . . . drive[s] institutions to use dedicated, single-purpose networks that are not available for broader community use, resulting in a situation in which "[c]ommunity residents working in healthcare or education often have unlimited access to the Internet while other rural residents are left with no access." These restrictions make it difficult to expand and share broadband with other community institutions in the most cost-effective way. This problem is especially acute in rural areas and Tribal lands where broadband may only be available and affordable to residents and small businesses in a community if the fiber optic infrastructure in that town is shared not only by commercial users but also by the local hospital, government office and school system. Because*

[30] http://www.fcc.gov/measuring-broadband-america.
[31] http://www.fcc.gov/events/mobile-broadband-services-testing-and-measurement-program. DA 12-1442, Released: September 4, 2012, FCC TO LAUNCH MOBILE BROADBAND SERVICES TESTING AND MEASURMENT PROGRAM, CG Docket No. 09-158.
[32] Anchor institutions often have some form of broadband connection today, but that broadband connection is often inadequate to meet the needs of the community. Thus the challenge grant program should be open to "underserved" communities where the existing broadband network does not have sufficient capacity, as well as to "unserved" communities.

broadband networks—particularly fiber optic networks—demonstrate large economies of scale, bulk purchasing arrangements for forms of connectivity like second-mile and middle-mile access can drive down the per-megabit cost of such access considerably.

The FCC should explore creative solutions to help schools, libraries and health care providers reduce their broadband-related costs by aggregating demand with other community institutions so that they can purchase the maximum amount of broadband with their USF dollars. For instance, the FCC should remove barriers to the shared use of state, regional, Tribal, and local networks by schools, libraries and health care providers when such networks provide the most cost-efficient choice for meeting broadband needs. Because community anchor institutions are large—if not the largest—potential consumers of broadband in even the smallest of towns, adopting these recommendations will not only expand broadband options for the institutions themselves but also will improve availability in the community as a whole. [footnotes omitted]

The SHLB Coalition respectfully suggests that the Commission take up this recommendation and consider solutions that could promote the aggregation of networks and services for the benefit of CAIs and their communities. The most logical source of this fund would be the Connect America Fund (CAF). For instance, the FCC could set aside a certain portion of CAF funding to award as matching "challenge grants" to organizations that promise to deploy an aggregated network serving the needs of the anchor institutions in a community. The Governor of Illinois has recently implemented such a program, called the "Illinois Gigabit Communities Challenge".[33] The first two awards in this program were announced on October 16, 2012, both awards promised to deploy wireless and wireline networks serving the needs of anchor institutions and the businesses and residences in the community. This program could serve as a proto-type for a similar FCC program for the entire nationwide.

c. Recipients of CAF Phase I funding could be obligated, as a condition of receiving funding, to provide the CAIs in their regions with higher capacity bandwidth than 4 Mbps.

As discussed earlier, most anchor institutions need much more capacity than the 4 Mbps standard that the FCC established as the minimum requirement for residential consumers. The recipients of funding could be obligated to reach out and determine the needs of the anchor institution in each service territory that receives funding and deploy network capacity sufficient to meet that need. This requirement should be enforced with a requirement that the recipient of funding must submit an annual report of the anchor institutions' needs and how they play to upgrade the capacity of the broadband network to meet those needs. The recipients should

[33] See, http://www2.illinois.gov/gov/gigabit/Pages/default.aspx.

describe the progress they will make to meet the 1 Gbps goal of the National Broadband Plan. This may mean that recipients of funding should be entitled to receive more funding for each of the CAIs they serve than the $775 per location amount identified in the Order.

d. Recipients of CAF funding could be allowed to use the funding for the one-time costs of building high-capacity Second Mile/Middle Mile networks to each community with an open interconnection policy.

The FCC could try to emulate the success of the BTOP program by requirement recipients of CAF dollars to deploy open, high-capacity middle mile connections to anchor institutions. Such an approach would reduce the backhaul costs of serving a community and would make it easier for commercial and/or non-commercial entities to provide high-capacity Last Mile services to the community's anchor institutions and residences and businesses. Such an approach would also allow communities to "self-provide" their own Last Mile connections to community anchor institutions and the surrounding residential and business customers.

e. The FCC should survey what steps each state is taking to to ensure high-capacity BB connectivity for anchor institutions to meet the 1 Gbps goal, including success stories and "best practices."

Finally, the FCC should consider launching a survey to investigate what states are doing to improve the broadband connectivity of the community anchor institutions in their states. Some states have made significant amount of progress in this regard, and the success of these ventures should be made available to other states that are not as far along. The FCC could come up with a detailed and consistent questionnaire to explore what steps each state is taking. By asking for specific information about funding programs, regulatory proceedings, availability of broadband networks, etc. in consistent manner, the FCC would be in a position to analyze the results and then make a determination whether additional federal efforts are needed to spur additional deployment of high-speed networks to serve the needs of anchor institutions. Just by asking the questions, the FCC would give states added incentives to heighten the states' attention to the needs of community anchor institutions.

VI. CONCLUSION

Community anchor institutions – schools, libraries, health care providers, museums, public media centers, public safety, community centers, etc. – increasingly depend upon open, affordable high-capacity broadband to meet the needs of their communities. Anchor institutions are third leg of the stool of a healthy and vibrant local economy. For these reasons, the National Broadband Plan recommended that anchor institutions in every community should have affordable access to 1 Gbps broadband networks by 2020.

Unfortunately, the evidence shows that anchor institutions are "largely underserved", and their needs for broadband capacity continue to grow much faster than the deployment of new networks. We respectfully suggest that the Commission should develop an action plan to improve the broadband availability to anchor institutions and to move us forward to meet Goal #4. In particular, the Commission should consider:

1. Evaluating the broadband availability to anchor institutions as part of this and future 706 reports;
2. Initiate a speed test program for anchor institutions similar to the processes for measuring broadband speeds for residential and mobile users;
3. Establish a "challenge grant", using funding from the Connect America Fund, to award to entities that deploy an aggregate network serving the broadband needs of anchor institutions in a community;
4. Require recipients of CAF funding to demonstrate how they are using funding to deploy networks providing CAIs with the quality of broadband that CAIs need (which in most cases will far exceed the 4 Mbps standard set for residential users);
5. Require recipients of CAF funding to implement an open interconnection policy that will encourage further investment by Last Mile providers and self-provisioning; and
6. Conduct a survey of state efforts and best practices to meet the needs of anchor institutions;

Respectfully Submitted,

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